

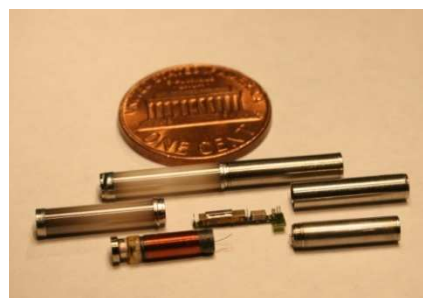
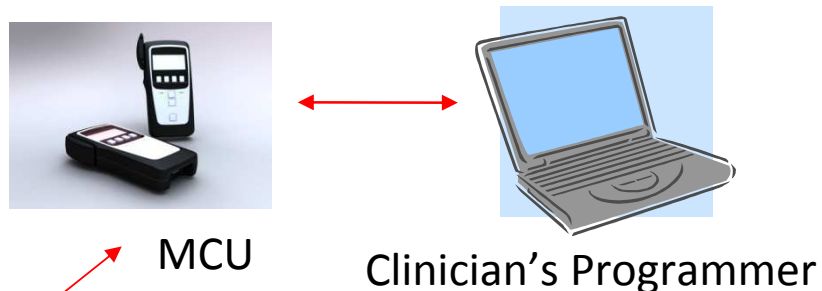
Healthcare Innovation in the 21st Century

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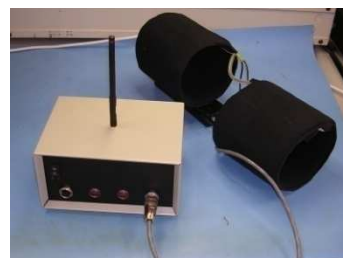
What You Just Saw

- Study subject/patient – Army Colonel
 - Special forces
 - Competitive athlete
 - High spinal cord injury – Bicycle vs. Car
 - Doctors reported that prior rehabilitation was ineffective
- Footage from an actual surgery at Walter Reed that occurred on November 5, 2008
 - 3 microstimulator devices were implanted via a minimally procedure
 - 18 months following injury
- Study objective
 - Can rehabilitation using microstimulators strengthen subject's muscles so that he can regain function in his lower extremities?

Personification of Innovation

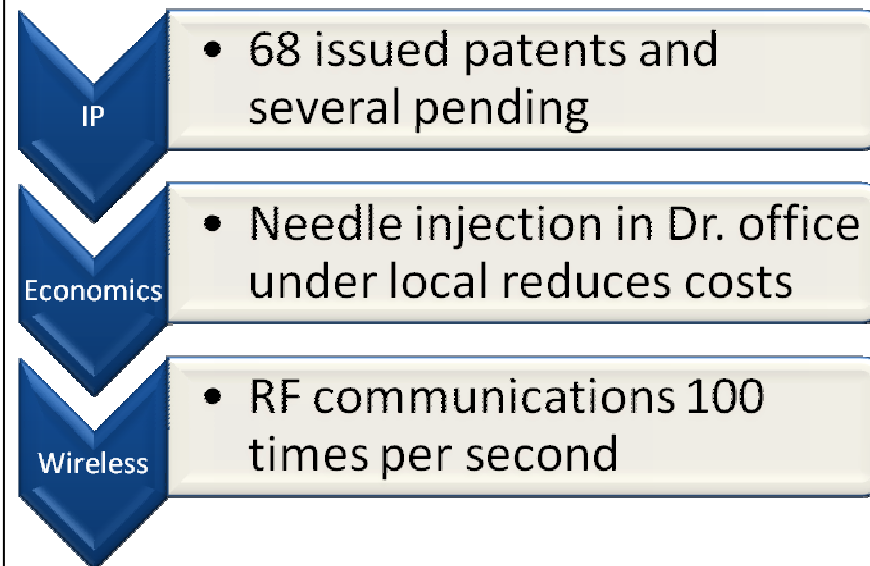


Microstimulator
Implant



Charging Station
and Coil

System Highlights



Walter Reed Army Medical Center
Leg Press with no stimulation
April 30, 2009

Microstimulator System Designed to Restore Function to Paralyzed Limbs

- ~2% of all Americans (5.6 million people) live with paralysis
 - Christopher Reeves Foundation, 2008
- Predominant Movement Disorders
 - Traumatic brain injury
 - Signature injury from conflicts
 - Stroke
 - ~800,000 per year in US
 - Spinal cord injury
 - ~12-15K per year in US
 - Multiple Sclerosis
 - ~ 400,000 people in US
 - Cerebral palsy
 - ~2 per every 1000 births in the US
- Advanced Prosthesis
 - Replaces less effective surface myoelectric sensors
 - Direct neural control

Patient Access Dependent Upon Regulatory Process

FCC

- Seeking allocation of spectrum on secondary basis
 - Began process in January, 2005
 - Process on-going
- Specific bands require coordination with NTIA
 - Shared spectrum with incumbent users on critical path

FDA

- Engineering of initial versions completed
 - 10 years in development at cost of \$110 million
- Human feasibility studies under FDA auspices in stroke, spinal cord injury and traumatic brain injury either completed or planned

CMS

- Insurance reimbursement effort a commercial activity
 - AMF commercial partners will undertake responsibility
- Some precedent for codes and coverage already exist

Healthcare Innovation

- Healthcare innovation should be a national **priority**
 - Enormous potential
 - Healthcare costs hijacking America
- Advanced **signal processing** along with the ability to collect, process, assimilate and use **data** will drive healthcare innovation in this century
- **Wireless** communications networks are vital to data handling
 - **Broadband networks** with the capacity to handle massive amounts data at high rates is required
 - Networks must be *sufficiently* **reliable** and **secure**
- Advanced communications platforms must be **available** to foster healthcare innovation

Disclaimer

- **Caution: The Microstimulator System is an Investigational device. Limited by Federal (or USA) law to investigational use, only.**

Thank You